User Manual

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1. Introduction

The user manual is to guide you to install the GSM Home Security and Automation in steps. However the reader must be an engineer to be able to understand the setup.

The device package contains:

- 2x Power supply
- PSoC Kit
- PSoC Burner
- GSM module Enfora
- Relay circuit
- Lamp
- 2x Alarm
- Switch
- User Manual
- Software CD
- 12 V converter card

2. Overview

2.1. Functional Description

This installation will allow you to secure your house from burglars by trigging alarms and indicating to you there is a burglar in the house. As well it allows you to control any appliance in your house.

2.2. Cautions and Warnings

This project deals with AC electricity which is dangerous. You must treat electricity with caution. There are many books and websites about electrical safety procedures and if you’re not sure how to be safe you should read that any book first. Be careful when using PSoC kit with power supply. Avoid changing connection in the kit with power supply on.

3. Instruction

3.1. Software Installation

a) Open Package

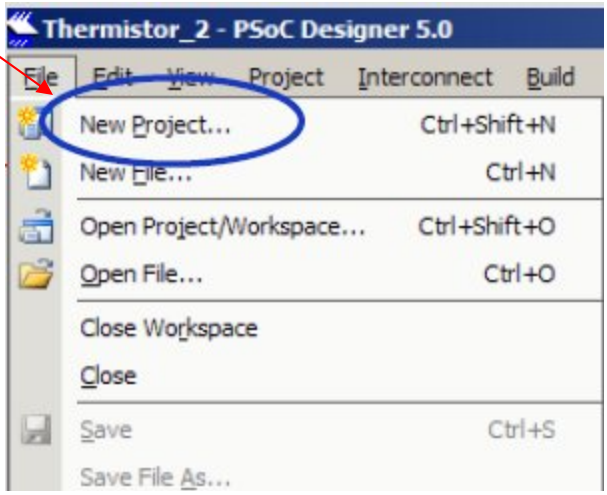
b) Install Software CD

c) Restart your computer

3.2. Designing system

a) Open PSoC Designer

b) Select Start New Project

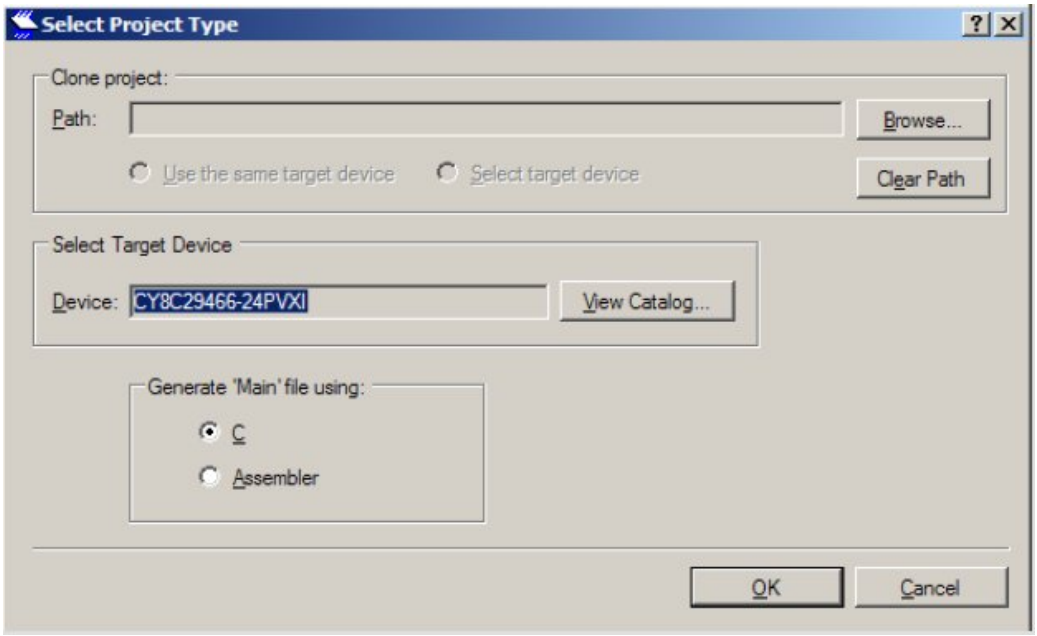


c) Select Project Type

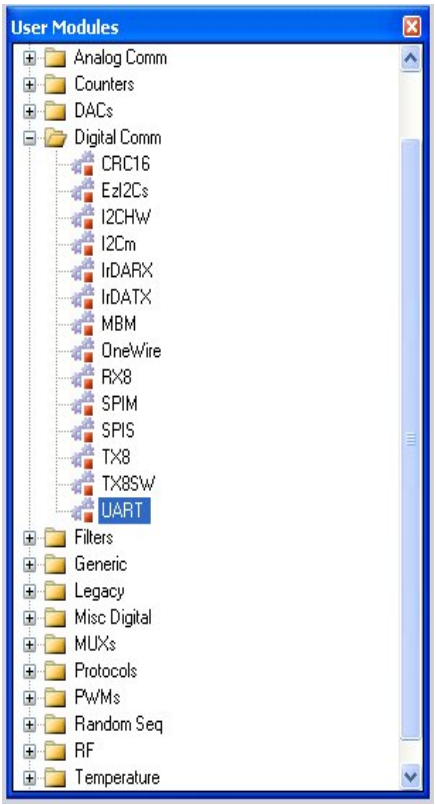
d) Name the Project

e) Select Device and Coding Method

- CY8C29666-24PXI
- C
- OK

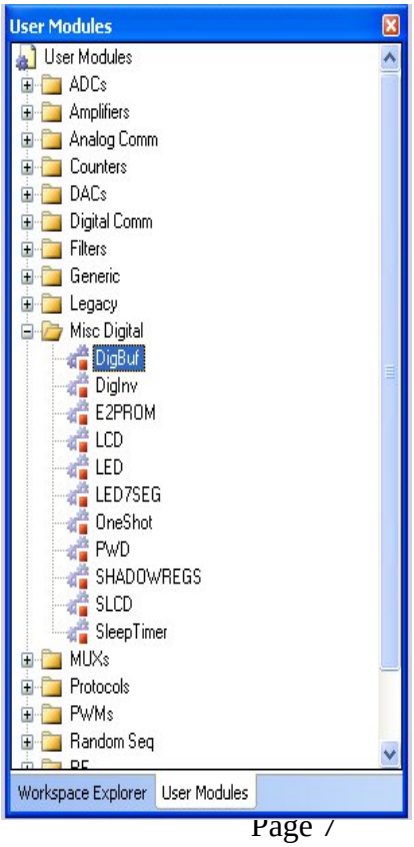


f) Select UART from User Module Pages

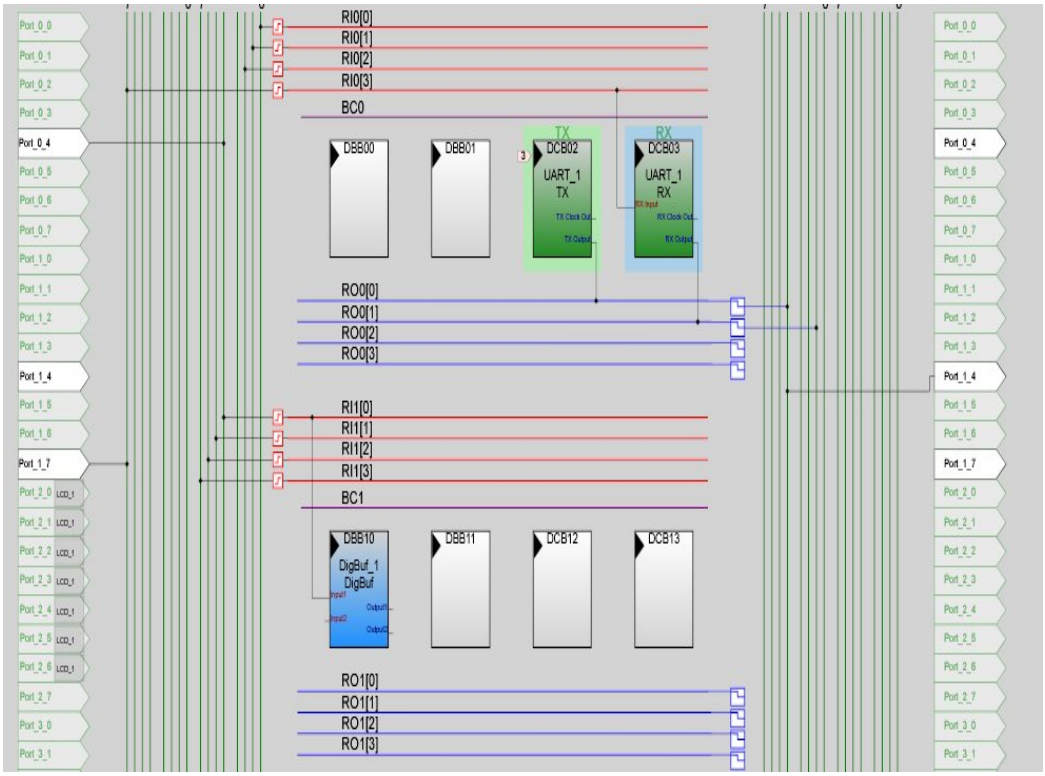


g) Double Click on UART wait a few moments until the user module is placed in the Interconnect Window.

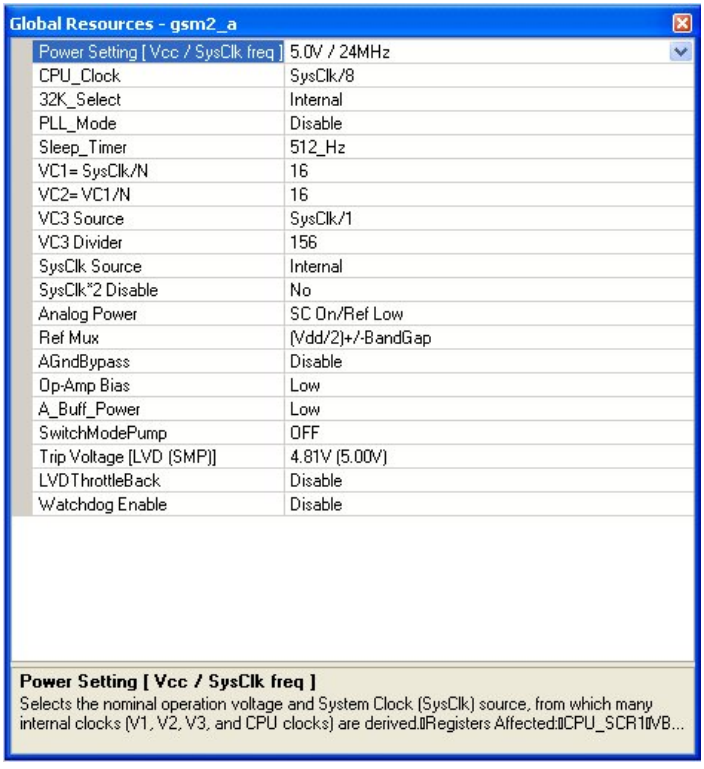
h) Repeat same for Digital Buffer



i) When you are done the screen should look like this



j) Configure Global Resources

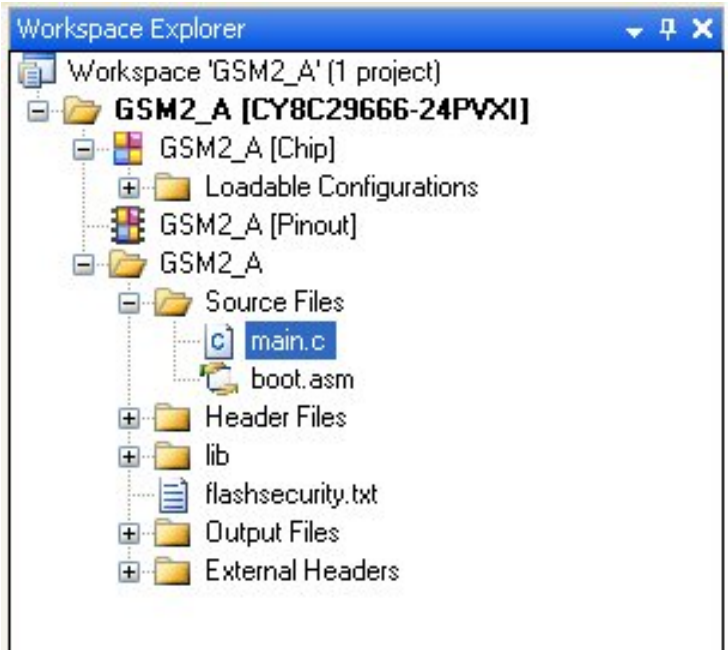

Global Resources - gsm2_a
Power Setting [Vcc / SysClk freq] 5.0V / 24MHz
CPU_Clock SysClk/8
32K_Select Internal
PLL_Mode Disable
Sleep_Timer 512_Hz
VC1= SysClk/N 16
VC2= VC1/N 16
VC3 Source SysClk/1
VC3 Divider 156
SysClk Source Internal
SysClk*2 Disable No
Analog Power SC On/Ref Low
Ref Mux (Vdd/2)+/-BandGap
AGndBypass Disable
Op-Amp Bias Low
A_Buff_Power Low
SwitchModePump OFF
Trip Voltage [LVD (SMP)] 4.81V (5.00V)
LVDThrottleBack Disable
Watchdog Enable Disable
Power Setting [Vcc / SysClk freq]
Selects the nominal operation voltage and System Clock (SysClk) source, from which many internal clocks (V1, V2, V3, and CPU clocks) are derived. Registers Affected: CPU_SCR1 VB...

k) Configure User Modules

Parameters - UART_1

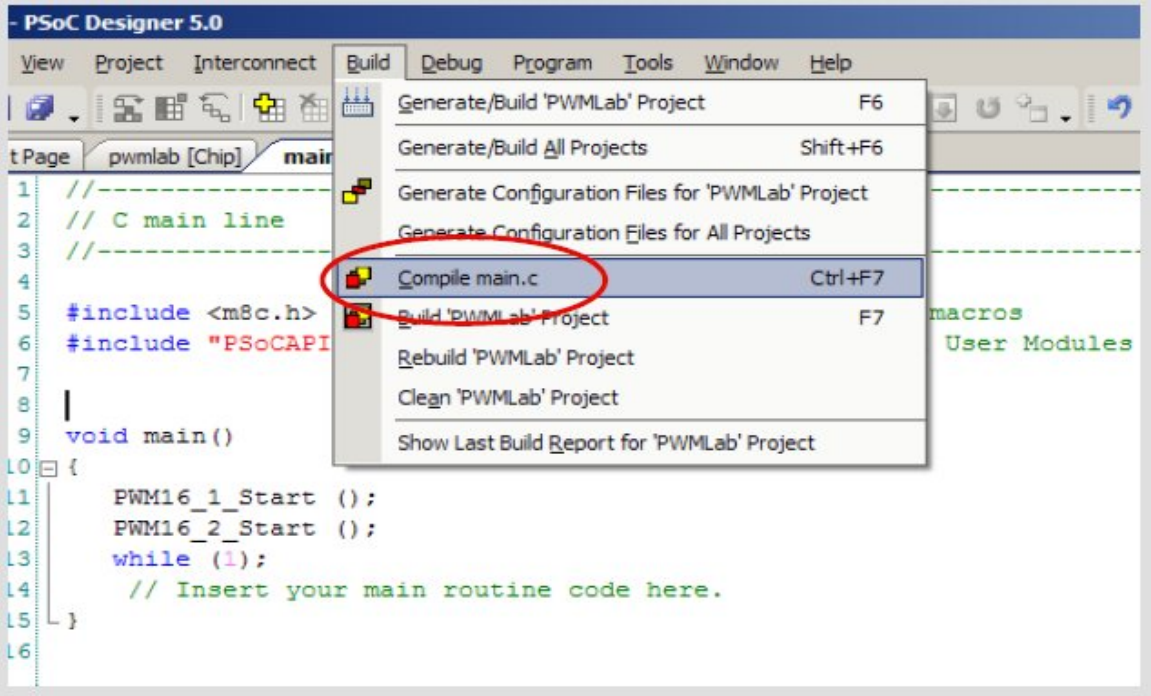
Name	UART_1
User Module	UART
Version	5.3
Clock	VC3
RX Input	Row_0_Input_3
TX Output	Row_0_Output_0
TX Interrupt Mode	TXRegEmpty
ClockSync	Sync to SysClk
RxCmdBuffer	Enable
RxBufferSize	32
CommandTerminator	13
Param_Delimiter	32
IgnoreCharsBelow	32
Enable_BackSpace	Disable
RX Output	Row_0_Output_1
RX Clock Out	None
TX Clock Out	None
InvertRX Input	Normal

l) Create Application Code located to the left of application window.

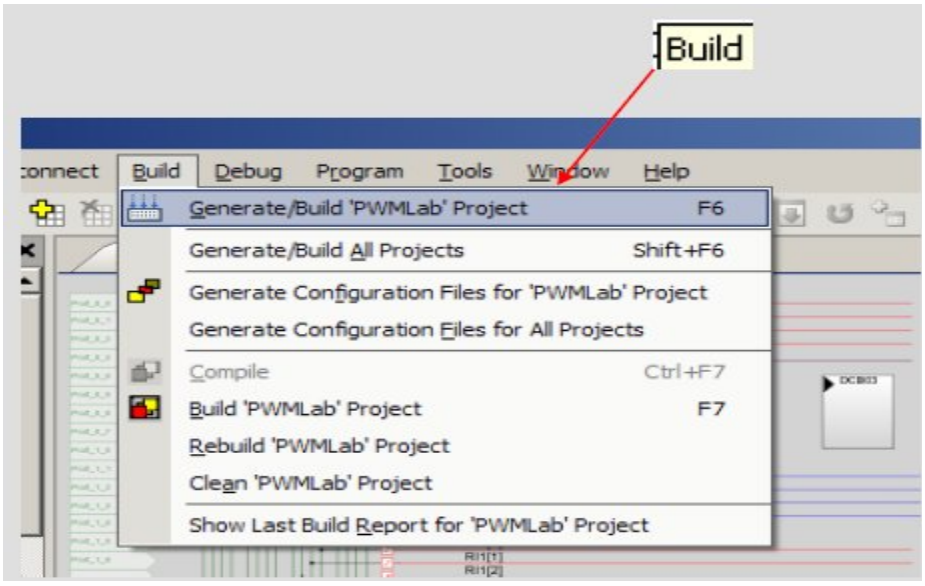


m) You can find the code in the CD called Main.C

n) Compile main.c



o) Build project

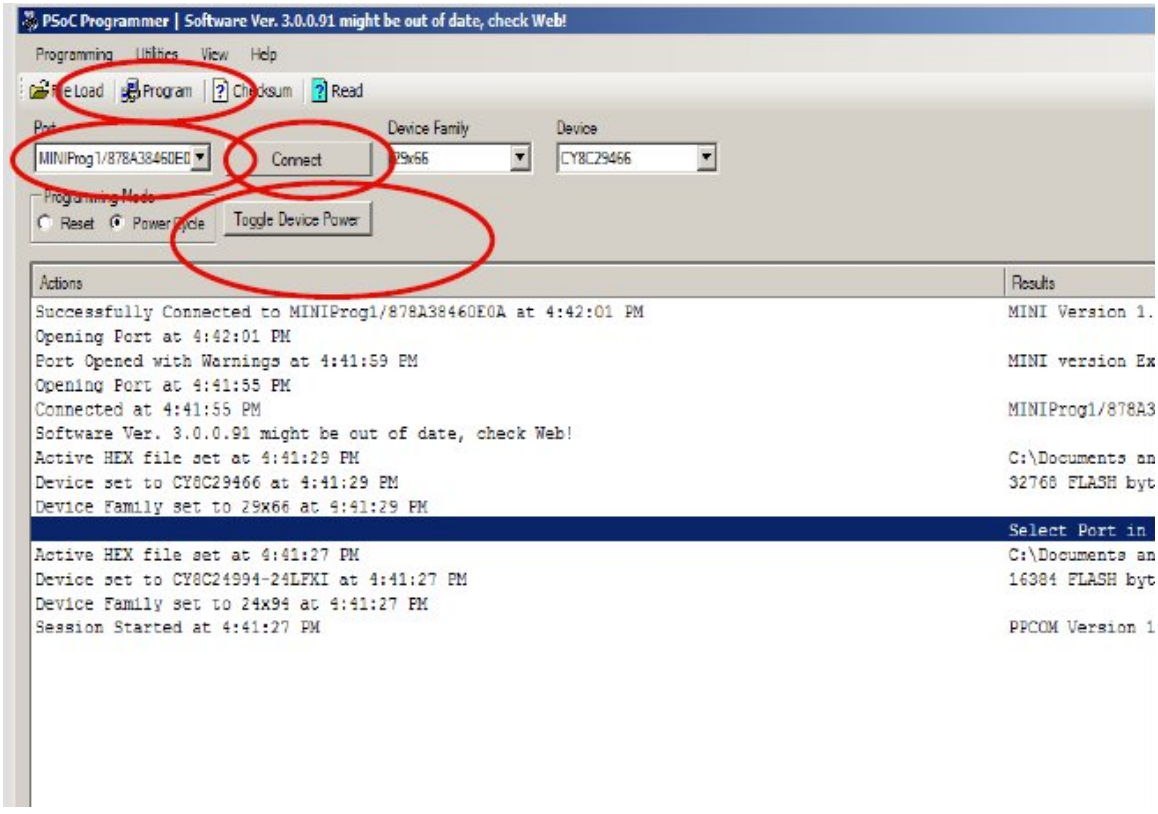


p) Program the device by selecting MINIProg in port window.

Select Connect

Select Program

When program is complete toggle Device Power



3.3 Hardware Installation

a) Connect PSoC and GSM module as shown below.

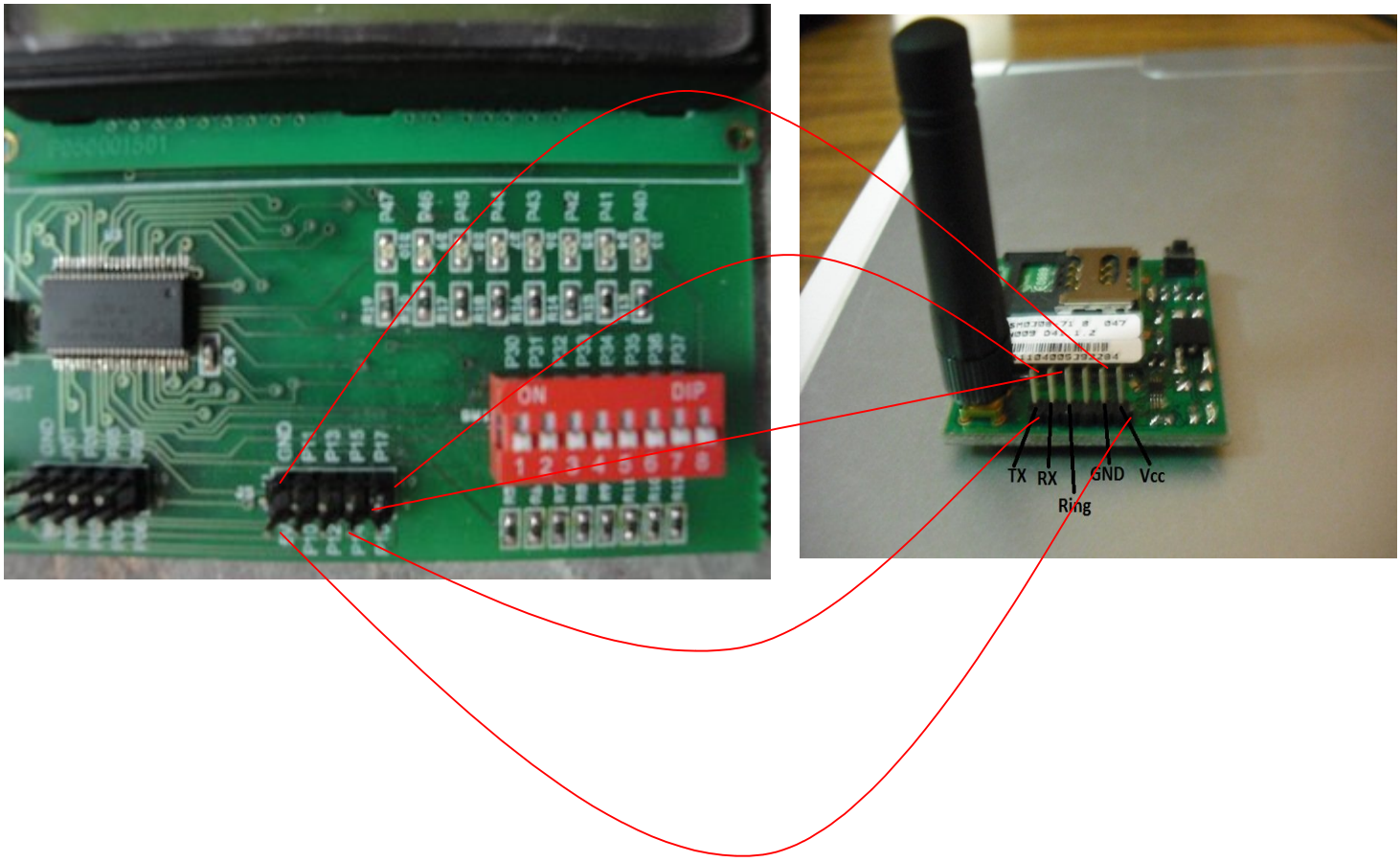
Vcc on GSM with Vcc on PSoC.

Gnd on GSM with Gnd on PSoC

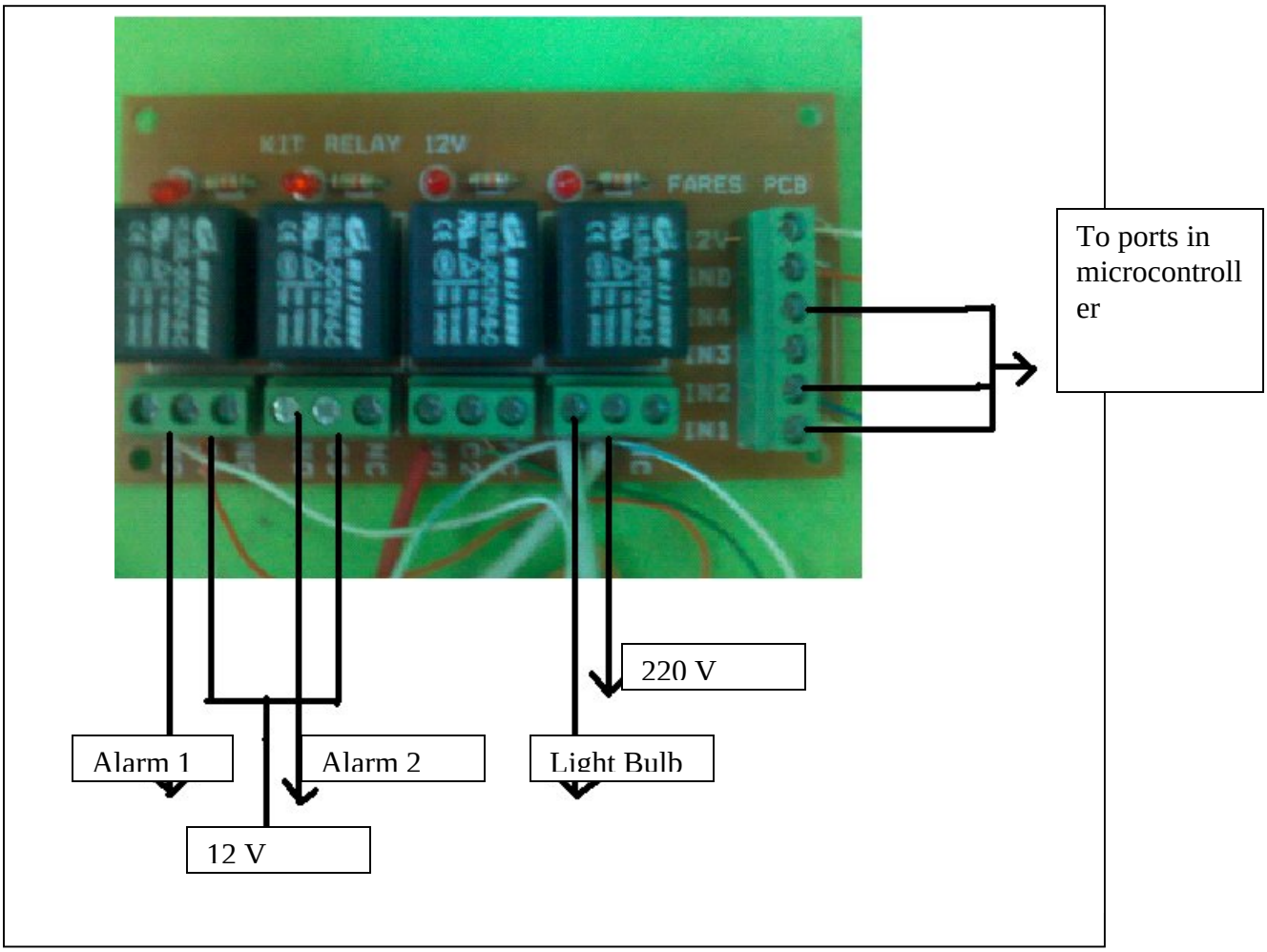
Port 14 (P14) with Rx pin

Port 17 (P17) with Tx pin

Port 16 P16) with Ring pin



b) Connect relay circuit to components as shown

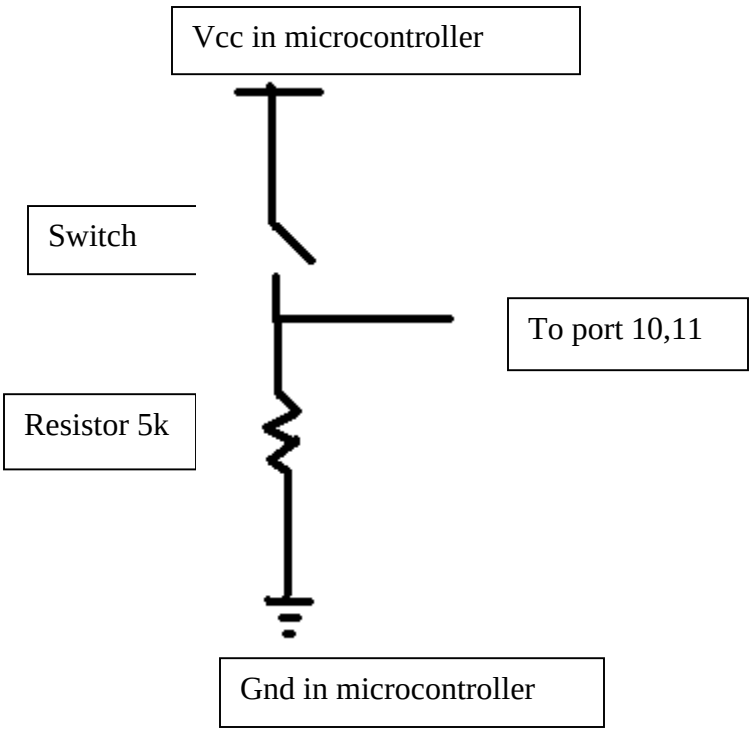


Connect IN1 to port 04. (Light Bulb)

IN2 to port 05. (Alarm 1)

IN3 to port 06. (Alarm 2)

c) Connect switches to ports in microcontroller



d) Connect Audrino Proximeter to microcontroller

Red +5V to Vcc in microcontroller.

Yellow wire to port 12 in microcontroller.

Green wire to ground in microcontroller.

4. Running the Project

a) Insert Sim Card inside the GSM module.

b) Turn on the power supply.

c) Send a message to the number of Sim Card.

d) Body of message

   a. 111 (To turn light on.)
   b. 000 (To turn light off.)
   c. 333 (To turn alarm on.)
   d. 222 (To turn alarm off.)

5. Error & Solution

If there is no response when any action is taken press the reset button found on the PSoC.